IN THE CLAIMS:

1. (Original) A magnetoresistance device with a multilayer structure which has a ferromagnetic tunnel junction formed by lamination of a first ferromagnetic layer, an insulating layer and a second ferromagnetic layer, and in which at least one of said first and second ferromagnetic layers is a half-metallic ferromagnet formed of a material having such an electronic structure that one spin having a metallic band near Fermi energy has a gap at a level of higher energy than said Fermi energy and the other spin has a metallic band at the same level.

2. (Original) A magnetoresistance device with a multilayer structure which has a ferromagnetic tunnel junction formed by lamination of an antiferromagnetic layer, a first ferromagnetic layer, an insulating layer and a second ferromagnetic layer, and in which at least one of said first and second ferromagnetic layers is a half-metallic ferromagnet formed of a material having such an electronic structure that one spin having a metallic band near Fermi energy has a gap at a level of higher energy than said Fermi energy and the other spin has a metallic band at the same level.

3. (Original) A magnetoresistance device with a multilayer structure which has a ferromagnetic tunnel junction formed by lamination of a ferromagnetic layer, an insulating layer and a semiconductor layer, and in which said ferromagnetic layer is a half-metallic ferromagnet formed of a material having such an electronic structure that one spin having a metallic band near Fermi energy has a gap at a level of higher energy than said Fermi energy and the other spin has a metallic band at the same level.

4. (Currently Amended) A magnetic head comprising a magnetoresistance device with a multilayer structure which has a ferromagnetic tunnel junction formed by lamination of a first ferromagnetic layer, an insulating layer and a second ferromagnetic layer, and in which at least one of said first and second ferromagnetic layers is a half-metallic ferromagnet formed of a material having such an electronic structure that one spin having a metallic band near Fermi energy has a gap at a level of higher energy than said Fermi

energy and the other spin has a metallic band at the same level.[[as recited in claim 1]].

5. (Currently Amended) A magnetic sensor comprising a magnetoresistance device with a multilayer structure which has a ferromagnetic tunnel junction formed by lamination of a first ferromagnetic layer, an insulating layer and a second ferromagnetic layer, and in which at least one of said first and second ferromagnetic layers is a half-metallic ferromagnet formed of a material having such an electronic structure that one spin having a metallic band near Fermi energy has a gap at a level of higher energy than said Fermi energy and the other spin has a metallic band at the same level.[[as recited in claim 1]].

6. (Currently Amended) A magnetic head comprising a magnetoresistance device with a multilayer structure which has a ferromagnetic tunnel junction formed by lamination of an antiferromagnetic layer, a first ferromagnetic layer, an insulating layer and a second ferromagnetic layer, and in which at least one of said first and second ferromagnetic layers is a half-metallic ferromagnet formed of a material having such an electronic structure that one spin having a metallic band near Fermi energy has a gap at a level of higher energy than said Fermi energy and the other spin has a metallic band at the same level [[as recited in claim 2]].

7. (Currently Amended) A magnetic sensor comprising a magnetoresistance device with a multilayer structure which has a ferromagnetic tunnel junction formed by lamination of an antiferromagnetic layer, a first ferromagnetic layer, an insulating layer and a second ferromagnetic layer, and in which at least one of said first and second ferromagnetic layers is a half-metallic ferromagnet formed of a material having such an electronic structure that one spin having a metallic band near Fermi energy has a gap at a level of higher energy than said Fermi energy and the other spin has a metallic band at the same level [[as recited in claim 2]].

8. (Currently Amended) A solid state memory comprising a magnetoresistance device with a multilayer structure which has a ferromagnetic tunnel junction formed by lamination of a first ferromagnetic layer, an insulating layer and a second ferromagnetic layer, and in

which at least one of said first and second ferromagnetic layers is a half-metallic ferromagnet formed of a material having such an electronic structure that one spin having a metallic band near Fermi energy has a gap at a level of higher energy than said Fermi energy and the other spin has a metallic band at the same level.[[as recited in claim 1]].

9. (Original) The magnetoresistance device according to claim 1, wherein said magnetoresistance device has a negative resistance when magnetizations of said first and second ferromagnetic layers are parallel to each other.

10. (Original) The magnetoresistance device according to claim 1, wherein said magnetoresistance device has a negative resistance when magnetizations of said first and second ferromagnetic layers are antiparallel to each other.

11. (Original) The magnetoresistance device according to claim 1, wherein said first or second ferromagnetic layer is formed of zinc-blende type MnC.

12. (Original) The magnetoresistance device according to claim 1, wherein said first or second ferromagnetic layer has a zinc-blende type crystal structure and is formed of an Mn compound.

13. (Original) The magnetoresistance device according to claim 1, wherein said first or second ferromagnetic layer has a zinc-blende type crystal structure and has a lattice constant in a range of 4.0 to 4.5 Angstroms.

14. (Currently Amended) A magnetic head which comprises a magnetoresistance device with a multilayer structure which has a ferromagnetic tunnel junction formed by lamination of a first ferromagnetic layer, an insulating layer and a second ferromagnetic layer, and in which at least one of said first and second ferromagnetic layers is a half-metallic ferromagnet formed of a material having such an electronic structure that one spin having a metallic band near Fermi energy has a gap at a level of higher energy than said Fermi energy and the other spin has a metallic band at the same level wherein said

magnetoresistance device has a negative resistance when magnetizations of said first and second ferromagnetic layers are antiparallel to each other [[as recited in claim 10]] and operates under a finite bias indicating a negative resistance area.